00_pulp

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1 PuLP Tutorial

Source: http://benalexkeen.com/linear-programming-with-python-and-pulp-part-2/

```python
In [1]: import pulp
        from pulp import solvers
```

```python
In [2]: my_lp_problem = pulp.LpProblem("My LP Problem", pulp.LpMaximize)
        my_lp_problem.solver = solvers.GLPK()

        x = pulp.LpVariable('x', lowBound=0, cat='Continuous')
        y = pulp.LpVariable('y', lowBound=2, cat='Continuous')

        # Objective function
        my_lp_problem += 4 * x + 3 * y, "Z"

        # Constraints
        my_lp_problem += 2 * y <= 25 - x
        my_lp_problem += 4 * y >= 2 * x - 8
        my_lp_problem += y <= 2 * x - 5

        my_lp_problem
```

```
Out[2]: My LP Problem:
        MAXIMIZE
        4*x + 3*y + 0
        SUBJECT TO
        _C1: x + 2 y <= 25

        _C2: - 2 x + 4 y >= -8

        _C3: - 2 x + y <= -5

        VARIABLES
        x Continuous
        2 <= y Continuous
```

```
In [3]: my_lp_problem.solve()
        pulp.LpStatus[my_lp_problem.status]

Out[3]: 'Optimal'

In [4]: for variable in my_lp_problem.variables():
            print("{} = {}".format(variable.name, variable.varValue))

x = 14.5
y = 5.25


In [5]: pulp.value(my_lp_problem.objective)

Out[5]: 73.75
```